



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/782,988 | 02/13/2001 | Hitoshi Sekine | 49986-0505 | 1948 |

29989 7590 02/12/2003

HICKMAN PALERMO TRUONG & BECKER, LLP
1600 WILLOW STREET
SAN JOSE, CA 95125

EXAMINER

EHICHIOYA, FRED I

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,988

Applicant(s)

EKINE ET AL.

Examiner

Fred I. Ehichioya

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

1. The application has been examined. Claims 1 – 31 are pending in this office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 3, 8, 9, 10, 11, 12, 13, 18, 19, 20, 21, 22, 23, 28, 29, 30 and 31 are rejected under 35 U.S.C 102(b) as been anticipated by U.S. Patent 5,502,576 issued to Ramsay, Thomas E. hereafter "Ramsay".

Regarding claim 1, Ramsay teaches a data storage apparatus comprising:

an interface ("the addition of a SCSI hard drive to a personal computer permits the system to be scaled upwardly to increase its information storage capacity", column 13, lines 43 – 45) configured to receive digital data ("electronic image document", column 30, line 22); and

a data processor ("interactive processor" column 14, line 64) communicatively coupled to the interface ("The bus structure 36 of the host processor is preferably equipped for connection to a digital capture device 38 such as a document scanner through a peripheral interface 40", column 28, lines 19 – 21) and being configured to

automatically receive digital data from the interface ("Consequently, an infeed control interface 86 must be connected to the EIS interface 30 so that the EIS interface 30 can receive ready-state acknowledgements from the automatic document feeder and step or advance commands can be sent to the automatic document feeder, and a corresponding indexing or accession control interface 88 would be connected between the EIS interface 30 and the storage device 70 to correlate the volume serial numbers and frame numbers with the appropriate images that are stored, and provide sequencing and control signals to the storage device 70", column 31, lines 24 – 34) and cause the digital

data to be stored to a write-once-read-many (WORM) storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24).

Regarding claim 2, Ramsay teaches a WORM storage device ("A separate storage device 70' such as a second analog WORM optical laser disc recorder (LDR) may be utilized at a remote location for batch downloading or backup of images stored on the first storage device 70", column 31, lines 37 – 40).

Regarding claim 3, Ramsay teaches the data processor ("interactive processor", column 14, line 64) is further configured to generate one or more indexes ("Since each electronic image document is stored on the storage device 70 in the form of one or more frames (depending upon the operational mode being used and the size of the

Art Unit: 2172

image), a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 55 – 62) for data stored to the WORM storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24).

Regarding claim 8, Ramsay teaches the digital data includes facsimile data ("facsimile transmission protocols for transmitting documents at equivalent speeds", column 21, lines 44 – 45).

Regarding claim 9, Ramsay teaches the digital data includes electronic document data ("electronic image document", column 29, line 53).

Regarding claim 10, Ramsay teaches the digital data includes printer data ("Each computer 14 on the network 12 is linked to various peripheral devices including a digital document input device 18 such as a document scanner, an output or representation device 20 such as a laser printer or film recorder, and a transmission interface 22 such as a modem or facsimile machine", column 25, lines 39 – 44).

Regarding claim 11, Ramsay teaches the data is stored on an WORM optical medium ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24), and the data processor ("interactive processor" column 14, line 64) is further configured to cause a label to be applied ("a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 58 – 62) to the

WORM optical medium ("WORM optical laser disk recorder", column 30, lines 23 – 24), wherein the label specifies one or more attributes ("an accession number, index, or address for the initial frame and size", column 30, lines 59 – 60) of the data.

Regarding claim 12, Ramsay teaches a method for storing data comprising the computer-implemented steps of:

receiving digital data to be stored ("It is a unique object of this invention to design a system for the capture of electronic images from tangible source documents, and the subsequent transmission, storage, and retrieval of those electronic images, which permits complete decentralization of document processing operations among remote networks, and permits remote operators to transmit, store, retrieve, and receive documents with the same capabilities and access available to a central document processing or coordination facility", column 20, lines 59 – 67); and

automatically causing the digital data to be stored ("Consequently, an infeed control interface 86 must be connected to the EIS interface 30 so that the EIS interface 30 can receive ready-state acknowledgements from the automatic document feeder and step or advance commands can be sent to the automatic document feeder, and a corresponding indexing or accession control interface 88 would be connected between the EIS interface 30 and the storage device 70 to correlate the volume serial numbers and frame numbers with the appropriate images that are stored", column 31, lines 24 – 33) to a write-once-read-many

(WORM) storage device ("WORM optical laser disk recorder", column 30, lines 23 – 24) without human intervention ("The data or information is encoded so that it may be utilized or operated on directly without human or artificial intelligence being applied", column 6, lines 27 – 30).

Regarding claim 13, Ramsay teaches generating one or more indexes ("Since each electronic image document is stored on the storage device 70 in the form of one or more frames (depending upon the operational mode being used and the size of the image), a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 55 – 62) for data stored to the WORM storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24).

Art Unit: 2172

Regarding claim 18, Ramsay teaches the digital data includes facsimile data ("facsimile transmission protocols for transmitting documents at equivalent speeds", column 21, lines 44 – 45).

Regarding claim 19, Ramsay teaches the digital data includes electronic document data ("electronic image document", column 29, line 53).

Regarding claim 20, Ramsay teaches the digital data includes printer data ("Each computer 14 on the network 12 is linked to various peripheral devices including a digital document input device 18 such as a document scanner, an output or representation device 20 such as a laser printer or film recorder, and a transmission interface 22 such as a modem or facsimile machine", column 25, lines 39 – 44).

Regarding claim 21, Ramsay teaches the data is stored on an WORM optical medium ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24), and the method further comprises causing a label to be applied ("a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 58 – 62) to the

Art Unit: 2172

WORM optical medium ("WORM optical laser disk recorder", column 30, lines 23 – 24), wherein the label specifies one or more attributes ("an accession number, index, or address for the initial frame and size", column 30, lines 59 – 60) of the data.

Regarding claim 22, Ramsay, teaches a computer-readable medium carrying one or more sequences of one or more

instructions for storing data, the one or more sequences of one or more

instructions including instructions which, when executed by one or more

processors, cause the one or more processors to perform the steps of:

receiving digital data to be stored ("It is a unique object of this invention to design a system for the capture of electronic images from tangible source documents, and the subsequent transmission, storage, and retrieval of those electronic images, which permits complete decentralization of document processing operations among remote networks, and permits remote operators to transmit, store, retrieve, and receive documents with the same capabilities and access available to a central document processing or coordination facility", column 20, lines 59 – 67); and

automatically causing the digital data to be stored ("Consequently, an infeed control interface 86 must be connected to the EIS interface 30 so that the EIS interface 30 can receive ready-state acknowledgements from the automatic document feeder and step or advance commands can be sent to the automatic document feeder, and a corresponding indexing or accession control interface 88 would be connected between the EIS interface 30 and the storage device 70 to correlate the volume serial numbers

Art Unit: 2172

and frame numbers with the appropriate images that are stored", column 31, lines 24 – 33) to a write-once-read-many

(WORM) storage device ("WORM optical laser disk recorder", column 30, lines 23 – 24) without human intervention ("The data or information is encoded so that it may be utilized or operated on directly without human or artificial intelligence being applied", column 6, lines 27 – 30).

Regarding claim 23, Ramasy teaches comprising one or more sequences of additional instructions ("The mainframe 16 will issue an instruction through the digital communication pathway (and electronic image server 30) to the mass storage device 34, which will retrieve the appropriate number of frames from the storage medium in the mass storage device 34 and transmit those frame over the high speed network 28 to the requesting computer 14", column 26, lines 41 - 47) which, when executed by the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5), cause the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5) to generate one or more indexes ("Since each electronic image document is stored on the storage device 70 in the form of one or more frames (depending upon the operational mode being used and the size of the image), a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 55 – 62)

Art Unit: 2172

for data stored to the WORM storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24).

Regarding claim 28, Ramsay teaches the digital data includes facsimile data ("facsimile transmission protocols for transmitting documents at equivalent speeds", column 21, lines 44 – 45).

Regarding claim 29, Ramsay teaches the digital data includes electronic document data ("electronic image document", column 29, line 53).

Regarding claim 30, Ramsay teaches the digital data includes printer data ("Each computer 14 on the network 12 is linked to various peripheral devices including a digital document input device 18 such as a document scanner, an output or representation device 20 such as a laser printer or film recorder, and a transmission interface 22 such as a modem or facsimile machine", column 25, lines 39 – 44).

Regarding claim 31, Ramsay teaches the data is stored on an WORM optical medium ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24), and

the further comprising one or more sequences of additional instructions ("The mainframe 16 will issue an instruction through the digital communication pathway (and electronic image server 30) to the mass storage device 34, which will retrieve the appropriate number of frames from the storage medium in the mass storage device 34 and transmit those frame over the high speed network 28 to the requesting computer 14", column 26, lines 41 - 47) which,

when executed by the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5), cause the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5) to cause a label to be applied ("a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 58 – 62) to the

WORM optical medium ("WORM optical laser disk recorder", column 30, lines 23 – 24),

wherein the label specifies one or more attributes ("an accession number, index, or address for the initial frame and size", column 30, lines 59 – 60) of the data.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4, 5, 6, 7, 14, 15, 16, 17, 24, 25, 26, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsay, Thomas E. hereafter "Ramsay" (U.S. Patent 5,502,576) in view of Kern Robert Frederick hereafter "Kern" (U.S. Patent 6,202,124).

Regarding claim 4, Ramsay teaches the data processor ("interactive processor" column 14, line 64) and one or more attributes ("accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 59 – 63) of the data stored to the WORM storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24).

Ramsay does not explicitly teach configured to generate meta data.

However, Kern teaches configured to generate meta data ("the host initiates each data transfer operation, protects the source data by serializing it, and prepares (or

Art Unit: 2172

supervises preparation of) metadata related to the source data", column 3, lines 20 – 23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Ramsay by teaching of Kern wherein the data storage subsystem stores and manages digital data on behalf of various computer users, under direction of a host computer. Advantageously, data transfer operations performed by the invention are consistent and valid among the participating data storage devices.

Regarding claim 5, Ramsay does not teach further configured to process a search query, and in response to processing the search query, generate data that identifies data stored on the WORM storage device that satisfies the search query.

However, Kern teaches the data processor ("The host 102 includes one or more processors", column 1, lines 31 – 32) is further configured to process a search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52), and

in response to processing the search query, generate data ("The steps are initiated in step 502, when the host 202 generates a request to initiate a "data transfer operation." Data transfer operations include any copying, formatting, movement, or other transfer of data within one of the storage

Art Unit: 2172

devices 206-207", column 5, lines 64 – 67) that identifies ("the host 202 serializes and supervises the data", column 6, lines 63 – 64) data stored

on the WORM storage device ("an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape)", column 5, lines 49 – 50) that satisfies the search query.

Regarding claim 6, Ramsay teaches the data processor ("interactive processor" column 14, line 64) and one or more indexes ("Since each electronic image document is stored on the storage device 70 in the form of one or more frames (depending upon the operational mode being used and the size of the image), a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 55 – 62) generated by the data processor.

Ramsay does not explicitly teach configured to process the search query.

However, Kern teaches configured to process the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52).

Regarding claim 7, Ramsay teaches the data processor ("interactive processor" column 14, line 64) is further configure to automatically process ("The data or information is encoded so that it may be utilized or operated on directly without human

Art Unit: 2172

or artificial intelligence being applied to "interpret" or "recognize" specific information embedded within the document", column 6, lines 26 – 31).

Ramsay does not teach the search query according to a set of one or more time criteria.

However, Kern teaches the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52) according to a set of one or more time criteria ("In this context, "accessibility" concerns characteristics such as the availability ("busyness") of a machine's processor, availability of communication ports of the machine, availability of the communication links to/from the machine, etc.", column 52 – 56).

Regarding claim 14, Ramsay teaches one or more attributes ("accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 59 – 63) of the data stored to the WORM storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 – 24).

Ramsay does not explicitly teach generating meta data that describes one or more of the attributes.

However, Kern teaches generating meta data that describes one or more of the attributes ("the host initiates each data transfer operation, protects the source data by serializing it, and prepares (or supervises preparation of) metadata related to the source data", column 3, lines 20 – 23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Ramsay by teaching of Kern wherein the data storage subsystem stores and manages digital data on behalf of various computer users, under direction of a host computer. Advantageously, data transfer operations performed by the invention are consistent and valid among the participating data storage devices.

Regarding claim 15, Ramsay does not teach receive a search query, process the search query, generate data that identifies data stored on the WORM storage device that satisfies the search query.

However, Kern teaches receiving a search query ("The host 202 receives input from a system administrator or other user via the user input device 210", column 1, lines 31 – 32),

processing the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52), and

generating data ("The steps are initiated in step 502, when the host 202 generates a request to initiate a "data transfer operation." Data transfer operations include any copying, formatting, movement, or other transfer of data within one of the storage devices 206-207", column 5, lines 64 – 67) that identifies ("the host 202 serializes and supervises the data", column 6, lines 63 – 64) data stored on the WORM storage device ("an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape)", column 5, lines 49 – 50) that satisfies the search query.

Regarding claim 16, Ramsay teaches one or more indexes ("a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 58 – 62).

Ramsay does not explicitly teach processing the search query.

However, Kern teaches processing the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Ramsay by teaching of Kern wherein the data stored on the storage device are accessed by the serial number and index. These

Art Unit: 2172

indexes make it easy to search and locate data. Advantageously, data transfer operations performed by the invention are consistent and valid among the participating data storage devices.

Regarding claim 17, Ramsay teaches automatically processing ("The data or information is encoded so that it may be utilized or operated on directly without human or artificial intelligence being applied", column 6, lines 26 – 30).

Ramsay does not teach the search query to a set of one or more time criteria.

However, Kern teaches the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52) to a set of one or more time criteria ("In this context, "accessibility" concerns characteristics such as the availability ("busyness") of a machine's processor, availability of communication ports of the machine, availability of the communication links to/from the machine, etc.", column 52 – 56).

Regarding claim 24, Ramasy teaches comprising one or more sequences of additional instructions ("The mainframe 16 will issue an instruction through the digital communication pathway (and electronic image server 30) to the mass storage device 34, which will retrieve the appropriate number of frames from the storage medium in the mass storage device 34 and transmit those frame over the high speed network 28 to the requesting computer 14", column 26, lines 41 - 47) which, when executed by the one or

Art Unit: 2172

more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5),

Ramsay further teaches the data stored to the WORM storage device ("The electronic image document may then be stored on an analog storage device 70 such as an analog WORM optical laser disk recorder (LDR)", column 30, lines 22 - 24).

Ramsay does not explicitly teach generate meta data that describes one or more of the attributes.

However, Kern teaches generate meta data that describes one or more of the attributes ("the host initiates each data transfer operation, protects the source data by serializing it, and prepares (or supervises preparation of) metadata related to the source data", column 3, lines 20 - 23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Ramsay by teaching of Kern wherein the data storage subsystem stores and manages digital data on behalf of various computer users, under direction of a host computer. Advantageously, data transfer operations performed by the invention are consistent and valid among the participating data storage devices.

Regarding claim 25, Ramsay does not teach further comprising one or more sequences of additional instructions which, when executed by the one or more processors, cause the one or more processors to:

receive a search query,

process the search query,

generate data that identifies data stored on the WORM storage device that satisfies the search query.

However, Kern teaches receive a search query ("The host 202 receives input from a system administrator or other user via the user input device 210", column 1, lines 31 – 32),

process the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52), and

generate data ("The steps are initiated in step 502, when the host 202 generates a request to initiate a "data transfer operation." Data transfer operations include any copying, formatting, movement, or other transfer of data within one of the storage devices 206-207", column 5, lines 64 – 67) that identifies ("the host 202 serializes and supervises the data", column 6, lines 63 – 64) data stored on the WORM storage device ("an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape)", column 5, lines 49 – 50) that satisfies the search query.

Regarding claim 26, Ramasy teaches comprising one or more sequences of additional instructions ("The mainframe 16 will issue an instruction through the digital communication pathway (and electronic image server 30) to the mass storage device 34, which will retrieve the appropriate number of frames from the storage medium in the mass storage device 34 and transmit those frame over the high speed network 28 to the requesting computer 14", column 26, lines 41 - 47) which, when executed by the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5), cause the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5) ,

Ramsay also teaches one or more indexes ("a database 84 is utilized to record an accession number, index, or address for the initial frame and size (or for each of the separate frames) associated with a specific document to permit cataloging and selective retrieval of any document stored on that medium", column 30, lines 58 – 62).

Ramsay does not explicitly teach to processing the search query.

However, Kern teaches to processing the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 – 52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combine Kern by teaching of Ramsay wherein the data stored on the storage device are accessed by the serial number and index. These

Art Unit: 2172

instructions make it easy to search and locate data stored on the storage device. Advantageously, data transfer operations performed by the invention are consistent and valid among the participating data storage devices.

Regarding claim 27, Ramsay teaches comprising one or more sequences of additional instructions ("The mainframe 16 will issue an instruction through the digital communication pathway (and electronic image server 30) to the mass storage device 34, which will retrieve the appropriate number of frames from the storage medium in the mass storage device 34 and transmit those frame over the high speed network 28 to the requesting computer 14", column 26, lines 41 - 47) which, when executed by the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5), cause the one or more processors ("the processors responsible for document transformation and presentation", column 21, lines 4 - 5) .

Ramsay also teaches automatically process ("The data or information is encoded so that it may be utilized or operated on directly without human or artificial intelligence being applied", column 6, lines 26 - 30).

Ramsay does not teach the search query to a set of one or more time criteria.

However, Kern teaches the search query ("Particularly, the host 202 queries the outboard data manager 216 to determine whether the manager 216 is accessible to the host 202, and whether the manager 216 has access to the source data and target storage device", column 6, lines 48 - 52) to a set of one or more time criteria ("In this context, "accessibility" concerns characteristics such as the availability ("busyness") of a

Art Unit: 2172

machine's processor, availability of communication ports of the machine, availability of the communication links to/from the machine, etc.", column 52 – 56).

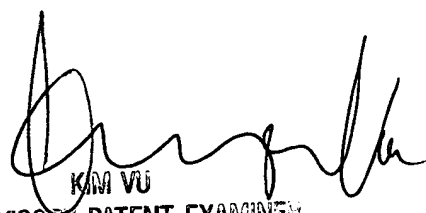
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 703-305-8039. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on 703-305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-303-3900.

FE
February 5, 2003


KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100